R E M A R K S

The Examiner has required the Applicant to provide a drawing under 37 C.F.R. § 1.81. To comply with the Examiner's requirement, a FIGURE has been added to the present application to show the structure of a Golf Ball. Accordingly, it is believed that the Examiner's request has been complied with.

Claim 2 has been rejected by the Examiner under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. This rejection is respectfully traversed.

As the Examiner will note, since claim 2 has been canceled from the present application, it is believed that this rejection has been eliminated.

Claims 1 and 2 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being clearly anticipated by Yoshimasa et al. (JP 06-327791). This rejection is respectfully traversed.

One of the important features of the present invention is the ratio (F/D) wherein F is the flexural modulus of the cover and D is the deformation of the golf ball. It is the Examiner's position that the F/D ratio is an inherent feature of the Yoshimasa reference.

As the Examiner will note, claim 1 has been amended to recite that the ratio F/D of the flexural modulus of the cover F to the deformation of the golf ball D is within the range of 24 to 31. Support for this range can be found on

pages 6 and 7 of the present application. The Applicant has found that a F/D ratio of this amount is particularly effective in obtaining the durability in the golf ball which is desired when golf balls are used for driving range purposes. As noted on page 23 of the present application, the durability represents the number of hits until the cover of the golf ball cracks, and is indicated by an index when that of the Comparative Example 1 is 100. The larger the number is, the better is the durability of the golf ball. As noted in Table 5 of the present application, by providing a ratio F/D of between 24 and 31, a durability of 141, 144 and 137, for examples, 1, 2 and 4, respectively, can be obtained.

Although the Yoshimasa et al. reference contains no description of the ratio F/D, the Applicant has, in affect, calculated the ratio and found it to fall within the range of 44.3 to 115.7. This range falls clearly outside of the range of 24 to 31 as recited in claim 1 of the present application, and accordingly, for this reason alone, claim 1 is novel when compared to the Yoshimasa reference. The ratio F/D, within the range of 44 to 115.7 can be calculated as follows.

The following formulae (a) and (b) for converting the value of PGA compression (P) to that of the deformation amount (D) of the present application regarding the core and the golf ball respectively can be used.

$$D = 6.494 - 0.0381P \qquad \text{Formula (a)}$$
$$D = 7.1248 - 0.0435P \qquad \text{Formula (b)}$$

Formulae (a) and (b) are obtained from the description of U.S. Patent 5,368,304 to Sullivan et al., which was cited in the examination procedure of U.S. Patent

5,795,247 to Yokota et al. In the prosecution of the Yokota et al. patent, before the U.S.P.T.O., a Declaration was filed to show the relationship between Riehle compression and 10 to 130 kgf compression deformation. The relationship between the Riehle compression and 10 to 130 kgf compression deformation can be seen in the following Table A.

Table A

Kinds of Core	Kinds of Ball	Core		Ball	
		Riehle comp.	10-130 kgf comp.	Riehle comp.	10-130 kgf comp.
A	A1			62	2.86
	A2	87	3.69	59	2.73
	A3			65	2.99
B	B1			61	2.82
	B2	83	3.54	57	2.64
	B3			62	2.86
C	C1			49	2.29
	C2	64	2.79	47	2.21
	C3			50	2.34
D	D1			57	2.64
	D2	77	3.30	55	2.56
	D3			58	2.69

In the Sullivan et al. patent, Table A above was prepared from Table 3 of the Sullivan et al. patent, which also shows equivalent PGA compression. If the PGA compression values are inserted into Table A, the following Table B can created.

Table B

Kinds of Core	Kinds of Ball	Core			Ball		
		Riehle comp.	PGA comp.	10-130 kgf comp.	Riehle comp.	PGA comp.	10-130 kgf comp.
A	A1	87	73	3.69	62	98	2.86
	A2				59	101	2.73
	A3				65	95	2.99
B	B1	83	77	3.54	61	99	2.82
	B2				57	103	2.64
	B3				62	98	2.86
C	C1	64	96	2.79	49	111	2.29
	C2				47	113	2.21
	C3				50	110	2.34
D	D1	77	86	3.30	57	103	2.64
	D2				55	105	2.56
	D3				58	102	2.69

Based upon the above values, a graph identified as Fig. A, attached hereto, was created, to explain the relationship between PGA compression and 10 to 130 kgf compression deformation (called 10-130 Kgf deformation amount in the present invention). The above formulae (a) and (b) were then prepared from Fig. A.

The PGA compression of 70 to 95 in the Yoshimasa reference, was converted to the deformation amount (D) of 3.0 to 4.1 mm from formulae (b). Based on the deformation amount (D) of the Yoshimasa reference, the F, D and (F/D) values between the present application and the Yoshimasa reference can be compared in Table C below. The F, D and (F/D) values of the present application are also shown in Table C, so that a comparison can be made. The Yoshimasa reference shows the (F/D) ratio to be in the range of 36 to 98, is

different from the range of 44.32 to 115.7 as calculated from the Yoshimasa reference, because it was calculated from the Applicants formula which is different from formulae (b). In any event, the (F/D) ratios of the Yoshimasa reference fall outside of the range of 24 to 31 of the present application, by using either formulae.

Table C

	Present Application	Yoshimasa
F (MPa)	80 to 300	147 to 294
D (mm)	3.0 to 6.0	3.0 to 4.1
(F/D) ratio	24 to 31	36 to 98

Fig. B, attached hereto, is a graph to explain the relationship between the deformation amount D (x-axis) and the flexural modulus F (y-axis) in the golf ball. In the present application, F, D and (F/D) values are represented by the following formulae (1) to (3) taken from Table C above.

$$80 \leq F \leq 300 \qquad (1)$$

$$3.0 \leq D \leq 6.0 \qquad (2)$$

$$24 \leq (F/D) \leq 31 \qquad (3)$$

The formula (3) is equal to the following formula (4):

$$24D \leq F \leq 31D \qquad (4)$$

The formula (1) represents the area enclosed with the line (I) represented by the following formula:

$$F = 24D$$

and the line (II represented by the following formula:

$$F = 31D$$

Therefore, the area satisfying the formulae (1), (2) and (4) is area ②, which is the shaded portion shown in Fig. B.

On the other hand, in the Yoshimasa reference, the values of F, D and (F/D) are represented by the following formulae (5) to (7) from Table B.

$$147 \leq F \leq 294 \qquad (5)$$

$$3.0 \leq D \leq 4.1 \qquad (6)$$

$$36 \leq (F/D) \leq 98 \qquad (7)$$

The formula (7) is equal to the following formulae (8):

$$36D \leq F \leq 98D \qquad (8)$$

The formula (8) represents the area enclosed with the line (III) represented by the following formula:

$$F = 36D$$

and the line (IV) represented by the following formula:

$$F = 98D$$

Therefore, the area satisfying the formulae (5), (6) and (8) is area ①, which is the shaded portion, shown in Fig. B.

As is apparent in Fig. B, there is no portion where the two areas ② and ① overlap. As shown in Fig. B, the golf ball of the Yoshimasa reference does not

have the same value for (F/D) as that of the present application, even if the golf

balls do have the same value for F or D. Therefore, the golf ball of the

Yoshimasa reference is novel when compared to the golf ball of the present

application.

In addition, it is believed that the present invention is not obvious over

the Yoshimasa et al. reference, when reference is made to Table 5 at page 24

and Table 6 at page 25 of the present application. Concerning the golf balls of

Examples 1 to 5 (Table 5) and Comparative Examples 1 to 5 (Table 6) of the

present application, the F and D values are plotted in Fig. B, attached hereto.

The plots of the golf balls of Examples 3 and 5 fall outside of the area ②.

However, the plots of the golf balls of Examples 1, 2 and 4 fall within the area

②. As is apparent from Table 5, the golf balls of Examples 1, 2 and 4 have

excellent performance such that the durability value is within the range of 137

to 141, with good shot feel. The golf balls of Examples 3 and 5 have good shot

feel, but poor durability, of which the values are 100 and 128, respectively. The

golf balls of Comparative Examples 1 to 5 (Table 6), of which the plots are out

of the area ②, have poor performance when compared with the golf balls of the

Examples in Table 5. That is, the golf balls of Comparative Examples 1, 2 and 4

have good shot feel, but poor durability, of which the value is within the range

of 72 to 85. The golf balls of Comparative Examples 3 and 5, have poor

durability and poor shot feel.

In addition, the plots of the golf balls of Example 5 (Table 5) and Comparative Example 5 (Table 6) of the present application, fall within the area ①, that is, the area of the Yoshimasa reference. These golf balls have poor performance as described above. Therefore, golf balls having F and D values within the area of the Yoshimasa reference do not accomplish the results of the present invention, even if the F and D values are within the area of the present application. Thus, the Applicants have discovered that irrespective of the F value and the D value individually, if the F/D ratio falls outside of the range of the present application, the advantageous results of the present application, in terms of durability and shot feel, cannot be achieved.

Accordingly, in view of the above amendments and remarks, reconsideration of the rejection and allowance of claim 1 of the present application is respectfully requested.

In the event that the proposed amendment does not place the present application into condition for allowance, entry thereof is respectfully requested as placing the present application into better condition for Appeal.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. Joseph A. Kolasch (Reg. No. 22,463) at the telephone number of the
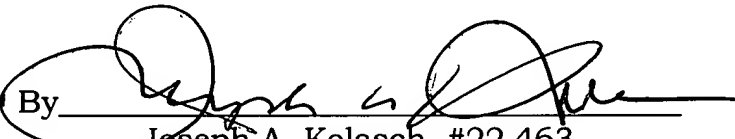
undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicant respectfully petitions for a three (3) month extension of time to August 4, 2003, for the period in which to file a response to the Office Action dated February 4, 2003 in the concurrently filed Notice of Appeal. The required fee has been paid in connection with the proper filing of this Notice of Appeal.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachments: One (1) Sheet of FIGURE (new drawing)
Fig. A (just as an enclosure)
Fig. B (just as an enclosure)